



Australian Government

PMBPROD210 Operate injection moulding equipment

Release: 1

PMBPROD210 Operate injection moulding equipment

Modification History

Release 1. Supersedes and is equivalent to PMBPROD210B Operate injection moulding equipment

Application

This unit of competency covers the skills and knowledge required to operate injection moulding equipment and ancillary equipment that is integral to the process.

This unit of competency applies to operators who are required to carry out pre-start, start and stop procedures, monitor and adjust the equipment, maintain feed and recognise routine and non-routine problems and take appropriate action.

This unit of competency applies to an individual working alone or as part of a team or group and working in liaison with other shift team members, team leader and supervisor, as appropriate.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Competency Field

Production

Unit Sector

Not applicable

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1	Check work requirements	1.1	Identify work requirements from production plan or request
		1.2	Check product, materials and equipment meet

- requirements for job
- 1.3 Recognise requirements which may not be in accordance with usual practice
- 1.4 Ask questions of appropriate person to confirm unusual practice
- 1.5 Ensure housekeeping is to requirements
- 1.6 Identify hazards associated with the job and take appropriate action
- 1.7 Perform other pre-operational checks in accordance with procedures
- 2 **Operate injection moulding equipment to procedures**
 - 2.1 Check process is operating within required limits
 - 2.2 Check product is in specification and to required quality standard
 - 2.3 Ensure product is consistently ready for next operation
 - 2.4 Maintain supply of materials as required
 - 2.5 Complete logs and records as required
 - 2.6 Collect and segregate scrap, trim and other materials as required
 - 2.7 Keep equipment and work area clean
 - 2.8 Pause machine cycle and perform emergency stop, as required
- 3 **Respond to routine problems to procedures**
 - 3.1 Recognise known faults that occur during the operation
 - 3.2 Identify and take action on causes of routine faults
 - 3.3 Log problems as required
 - 3.4 Identify non-routine process and quality problems and take appropriate action

Foundation Skills

This section describes those required skills (language, literacy and numeracy) that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Regulatory framework The latest version of all legislation, regulations, industry codes of practice and Australian/international standards, or the version specified by the local regulatory authority, must be used.

Applicable legislation, regulations, standards and codes of practice include:

- health, safety and environmental (HSE) legislation, regulations and codes of practice relevant to the workplace, equipment and production processes and hazardous materials
- Australian/international standards relevant to the materials being used and products being made
- any relevant licence and certification requirements.

All operations to which this unit applies are subject to stringent HSE requirements, which may be imposed through state/territory or federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between performance criteria and such requirements the legislative requirements take precedence.

Procedures All operations must be performed in accordance with relevant procedures.

Procedures are written, verbal, visual, computer-based or in some other form, and include one or any combination of:

- emergency procedures
- work instructions
- standard operating procedures (SOPs)
- safe work method statements (SWMS)
- formulae/recipes
- batch sheets
- temporary instructions
- any similar instructions provided for the smooth running of the plant.

Tools and equipment Tools and equipment include:

- injection moulding machines which may be electrical, mechanical, electromechanical or hydraulic

- components of injection moulding machines, including material supply systems, plastification units, dies/tools and injection units
- ancillary equipment that is integral to the process, including one or more of:
 - chillers
 - die heating equipment
 - hopper driers
 - mixing hoppers
 - dehumidifying driers
 - air compressors
 - dosing machines
 - blending and mixing equipment
 - conveyors.

Additional tools and equipment will be selected as required from:

- hand tools used in the process
- material loading equipment used for loading of raw materials
- relevant personal protective equipment (PPE).

Hazards

Hazards must be identified and controlled. Identifying hazards requires consideration of:

- weight, shape, volume of materials to be handled
- hazardous products and materials
- sharp edges, protrusions or obstructions
- slippery surfaces, spills or leaks
- rotational equipment or vibration
- heat from heated barrel, nozzle and hot runner moulds
- smoke, dust, vapours or other atmospheric hazards
- electricity
- gas
- gases and liquids under pressure
- structural hazards
- equipment failures
- machinery, equipment and product mass
- other hazards that might arise.

Routine problems

Routine problems must be resolved by applying known solutions.

Routine problems are predictable and include one or more of:

- variations in cycle time, temperature, pressure, speed
- variations in materials or contamination of materials
- die/tooling problems, such as damage to die
- job specifications which are not in accordance with usual practice
- product problems, such as:
 - short mouldings
 - flash
 - sink marks
 - voids
 - burn marks
 - splay/splash marks/silver streaking
 - blistering
 - flow marks
 - poor surface finish
 - weld lines
 - poor colour dispersion
 - colour contamination
 - black spots
 - ejection damage.

Known solutions are drawn from one or more of:

- procedures
- training
- remembered experience.

Non-routine problems must be reported according to according to relevant procedures.

Unit Mapping Information

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Links

MSA Training Package Implementation Guides - <http://mskills.org.au/training-packages/info/>